

SEQUENCE LISTING

<110> AKZO Nobel N.V.

<120> novel *Brachyspira hyodysenteriae* vaccine

<130> Bhyovaccine

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<170> PatentIn version 3.1

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<213> *Brachyspira hyodysenteria*

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<221> CDS

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Ser	Lys	Val	Glu	Asn	Asn	Gly	Ser	Ser	Gly	Ser	Ser	Gly	Gly	Asn	Ser	
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aaa tat gca tct gag tgg tgg aat gat cct aat aat ggt gga ttt gat Lys Tyr Ala Ser Glu Trp Trp Asn Asp Pro Asn Asn Gly Gly Phe Asp 65 70 75 80	240
gct tcg gat ata gat aaa tgg ttt ttg aaa gtt gaa ttt tta gca aat Ala Ser Asp Ile Asp Lys Trp Phe Leu Lys Val Glu Phe Leu Ala Asn 85 90 95	288
gat tat cca agt tac aga ttt tta aca aaa agc gga aga aaa gca gga Asp Tyr Pro Ser Tyr Arg Phe Leu Thr Lys Ser Gly Arg Lys Ala Gly 100 105 110	336
cat gtt tgg gta gtt tct aat gaa caa tct cag gca tat tta gat caa His Val Trp Val Val Ser Asn Glu Gln Ser Gln Ala Tyr Leu Asp Gln 115 120 125	384
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cct cca agc tgg cag aag cct agt aat ttg gtt gat aaa tac tct cct Pro Pro Ser Trp Gln Lys Pro Ser Asn Leu Val Asp Lys Tyr Ser Pro 225 230 235 240	720
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Val	Tyr	Phe	Asp	Lys	Thr	Asp	Pro	Ile	Leu	Val	Leu	Lys	Tyr	Asp	Lys		
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Ser	Ser	Asp	Ser	Phe	Lys	Tyr	Ser	Ser	Val	Lys	Gly	Asn	Lys	Gln	Ile		
				485					490					495			
gaa	gtt	gac	agc	aat	tta	tca	att	aaa	aga	gga	gag	aat	aaa	gag	ttt		1536
Glu	Val	Asp	Ser	Asn	Leu	Ser	Ile	Lys	Arg	Gly	Glu	Asn	Lys	Glu	Phe		

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 Lys Tyr Ala Ser Glu Trp Trp Asn Asp Pro Asn Asn Gly Gly Phe Asp
 65 70 75 80
 Ala Ser Asp Ile Asp Lys Trp Phe Leu Lys Val Glu Phe Leu Ala Asn
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 Asp Tyr Pro Ser Tyr Arg Phe Leu Thr Lys Ser Gly Arg Lys Ala Gly
 100 105 110
 His Val Trp Val Val Ser Asn Glu Gln Ser Gln Ala Tyr Leu Asp Gln
 115 120 125
 Gly Glu Val Cys Asn Thr Thr Ala Val Thr Gly Val Ser Ile Lys Pro
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Val Ala Asn Val Thr Gly Val Thr Tyr Thr Lys Tyr Lys Gly Leu Asn
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Thr Gly Tyr Trp Ile Ser Ile Asp Glu Gly Ile Asn Asp Lys Gly Gln
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Asn Tyr Pro Phe Tyr Glu Tyr Asp Pro Val Gly Tyr Val Lys Ser Asp
260 265 270

Gly Thr Val Val Ile Phe Asp Trp Phe Ala Asn Arg Leu Arg Gly Asn
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His Asn Asn Asp Pro Ile Lys Ser Asp Pro Lys Gly Ala Ile Val Pro
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Asn Pro Asn Thr Asn Pro Ser Ala Ser Thr Thr Gly Arg Ser Pro Tyr
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Ala Phe Tyr Ser Pro Leu Ala Gln Lys Asp Lys Thr Lys Ile Thr Ile
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Ser Thr Thr Lys Leu Ile Asn Tyr Thr Val Phe Ser Tyr Lys Tyr Ser
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Ile Gln Ile Phe Pro Pro Ser Met Lys Glu Glu Lys Leu Pro Tyr Ala
355 360 365

Tyr Ile Ala Tyr Ala Ser Tyr Gly Ala Ala Tyr Gln Asn Glu Ser Ser
 370 375 380

Lys Ser Val Glu Met Ile Ser Asp Ile Asn Lys Gly Glu His Tyr Gly
 385 390 395 400

Ser Ile Thr Arg Ile Ser Thr Val Pro Lys Ile Asp Lys Asp Gly Gly
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Thr Lys Asp Thr Phe Ile Glu Leu Ser Leu Lys Leu Ile Lys Asn Asp
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Glu Asn Thr Glu Phe Val Asp Gln Gly Thr Ala Gly Thr Gly Pro Leu
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Val Tyr Phe Asp Lys Thr Asp Pro Ile Leu Val Leu Lys Tyr Asp Lys
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Asp Asn Ser Ser Asn Glu Asp Lys Lys Glu Glu Thr Ile Thr Arg Glu	
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gat aca cca aaa atg aaa gtt aca gtt tat gga gca gat aaa gaa att	192
Asp Thr Pro Lys Met Lys Val Thr Val Tyr Gly Ala Asp Lys Glu Ile	
50 55 60	
caa gct gtg gaa ata aat gat aaa act tat tat gta ata ggc gga aaa	240
Gln Ala Val Glu Ile Asn Asp Lys Thr Tyr Tyr Val Ile Gly Gly Lys	
65 70 75 80	
gat gtt gag aat atg aca gaa gct gat ata aaa aaa tca tct tta gta	288
Asp Val Glu Asn Met Thr Glu Ala Asp Ile Lys Lys Ser Ser Leu Val	
85 90 95	
gca cct tta aaa gtt aca gaa gaa act gtt aat ggt aca aga ggt ata	336
Ala Pro Leu Lys Val Thr Glu Glu Thr Val Asn Gly Thr Arg Gly Ile	
100 105 110	
gtt gtt aca tat tat gat gta aaa gta ttc ttg ggt aaa aga aca gga	384
Val Val Thr Tyr Tyr Asp Val Lys Val Phe Leu Gly Lys Arg Thr Gly	
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aca gga act atc gta gga ata ttc gag cct cag aaa aat gat tgg act	432
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Thr Gly Asn Asp Leu Asp Arg Ser Leu Ser Ile Gln Ile Lys Leu Ser	
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aga aat ata gca ggt cct ata gat ata aaa aga gga agc ata tct tta	528
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Ala Pro Leu Lys Val Thr Glu Glu Thr Val Asn Gly Thr Arg Gly Ile
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Val Val Thr Tyr Tyr Asp Val Lys Val Phe Leu Gly Lys Arg Thr Gly
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Thr Gly Thr Ile Val Gly Ile Phe Glu Pro Gln Lys Asn Asp Trp Thr
130 135 140

Thr Gly Asn Asp Leu Asp Arg Ser Leu Ser Ile Gln Ile Lys Leu Ser
145 150 155 160

Arg Asn Ile Ala Gly Pro Ile Asp Ile Lys Arg Gly Ser Ile Ser Leu
165 170 175

Ala Phe Asn